

WHAT IS CLAIMED IS:

1. A vacuum cleaner comprising:

a housing having a separation chamber for separating
5 liquid and contaminants from a stream of air, and a
collection chamber for collecting the separated liquid and
contaminants,

a floor unit having a suction opening,

a passage between the suction opening and separation
10 chamber,

a suction source for establishing and maintaining the
stream of air from the suction opening to the separation
chamber,

a controller for stopping the suction source when a
15 level of liquid in the collection chamber rises to a
predetermined level, and

a protective structure to shield at least a portion of
the controller from circular movement of the liquid.

20 2. The vacuum cleaner of claim 1 wherein the controller
is a float and a switch.

3. The vacuum cleaner of claim 1 wherein the protective
structure is a float guide for constraining the float
25 therein.

4. The vacuum cleaner of claim 3 wherein an upstream wall of the float guide is solid for deflecting the circular movement of the liquid, and a downstream wall of the float
5 guide has a opening for allowing a liquid level in the float guide to rise with the level of liquid in the collection chamber.

5. The vacuum cleaner of claim 2 wherein the switch is
10 positioned on an outside wall of the collection chamber, and a lever is positioned through an opening in the wall for activating the switch.

6. The vacuum cleaner of claim 5 wherein the float has a
15 rod for engaging the lever.

7. The vacuum cleaner of claim 3 wherein the float guide is a tube with openings at a top and bottom thereof.

20 8. A vacuum cleaner comprising:

a housing having a separation chamber for separating liquid and contaminants from a stream of air, and a collection chamber for collecting the separated liquid and contaminants,

25 a floor unit having a suction opening,

a passage between the suction opening and separation chamber,

a suction source for establishing and maintaining the stream of air from the suction opening to the separation
5 chamber,

a float arranged to rise when a level of liquid in the collection chamber rises,

a protective structure for constraining the float therein and having an upstream wall for defecting circular
10 movement of the liquid,

a switch positioned on an outside wall of the collection chamber and for stopping the suction source, and

a lever positioned through an opening in the wall for activating the switch when the level of liquid rises to a
15 predetermined level.

9. A vacuum cleaner comprising:

a housing having a separation chamber for separating liquid and contaminants from a stream of air, and a
20 collection chamber for collecting the separated liquid and contaminants,

a floor unit having a suction opening,

a passage between the suction opening and separation chamber,

a suction source for establishing and maintaining the stream of air from the suction opening to the separation chamber, and

a structure for defining a path for the stream of air
5 along an internal perimeter of the separation chamber.

10. The vacuum cleaner of claim 9 wherein the structure is a cylindrical wall positioned within the separation chamber.

10

11. The vacuum cleaner of claim 9 wherein an air inlet of the separation chamber defines an inlet path for the stream of air that is tangential to the path along the internal perimeter of the separation chamber.

15

12. The vacuum cleaner of claim 11 wherein the air inlet has a restriction for increasing a velocity of the stream of air within the separation chamber.

20 13. The vacuum cleaner of claim 9 further including:

a float arranged to rise when a level of liquid in the collection chamber rises,

a protective structure for constraining the float therein and having an upstream wall for deflecting circular
25 movement of the liquid,

a switch positioned on an outside wall of the collection chamber and arranged for stopping the suction source, and

a lever positioned through an opening in the wall for
5 activating the switch when the level of liquid rises to a predetermined level.

14. A vacuum cleaner comprising:

a housing having a separation chamber for separating
10 liquid and contaminants from a stream of air, and a collection chamber for collecting the separated liquid and contaminants,

a floor unit having a suction opening,

a passage between the suction opening and separation
15 chamber,

a suction source for establishing and maintaining the stream of air from the suction opening to the separation chamber,

a structure for defining a path for the stream of air
20 along an internal perimeter of the separation chamber,

a controller for stopping the suction source when a level of liquid in the collection chamber rises to a predetermined level, and

a protective structure to shield at least a portion of
25 the controller from circular movement of the liquid.